

NOTES ON AUSTRALIAN VERRUCARIACEAE (LICHENISED ASCOMYCOTINA). 5. *STAUROTHELE PALLIDOPORA* SP. NOV. FROM SOUTH-EASTERN QUEENSLAND

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ABSTRACT

McCarthy, P.M. Notes on Australian Verrucariaceae (lichenised Ascomycotina). 5. *Staurothele pallidopora* sp. nov. from south-eastern Queensland. *Muelleria* 8:(3): 275–277 (1995). — *Staurothele pallidopora* is described from the Bunya Mountains in south-eastern Queensland where it inhabits siliceous rocks in subtropical rainforest.

INTRODUCTION

Staurothele Norman, a genus of crustose, pyrenocarpous lichens with muriform ascospores and hymenial algae, is already represented in Australia by the anti-tropical and aquatic *S. fissa* (Taylor) Zwackh (McCarthy 1993). A second species was recently collected in the Bunya Mountains, south-eastern Queensland and is described here.

Staurothele pallidopora P.M. McCarthy, sp. nov.

Thallus epilithicus, rimosus, pallido griseus vel pallido griseobrunneus, 50–100 μm crassus. Perithecia fere omnino immersa, 0.35–0.65 mm diametro. Involucrellum fuscoatrum vel atrum, 40–95 μm crassum, ad basim excipuli descendens. Ostiolum pallidum. Centrum 0.22–0.36 mm diametro. Periphyses 25–40 \times 2–3 μm . Algae hymenii elongatae-cylindricae, (4–)6–10(–12) \times 1.5–2(–2.5) μm . Asci 8-sporeae. Ascosporeae muriformes, incoloratae vel pallidofuscae, (18–)23(–28) \times (9–)11.5(–14) μm .

TYPUS: Australia, Queensland, Bunya Mountains National Park, 50 m below Little Falls, 26°52'S, 151°35'E, on dry shaded siliceous rocks, 5 Sep. 1993, P.M. McCarthy 768 (HOLOTYPUS: MEL; ISOTYPUS: BRI).

Thallus crustose, epilithic, determinate, matt, \pm smooth, pale grey to pale grey-brown, richly rimose to areolate (mainly around perithecia), becoming greenish when wetted, 50–100 μm thick. Thallus ecorticate, but with an upper, alga-free layer, 10–20(–25) μm thick; cells hyaline, rounded to angular, 3–6(–7) μm wide. *Algae* green, globose, scattered throughout the middle and lower layers of the thallus, (3–)5–7(–10) μm diam. *Interstitial hyphae* 3–5 μm diam. *Prothallus* black and continuous or not apparent. *Perithecia* numerous, 2/3 immersed to almost entirely immersed in the thallus. *Perithecial apex* crateriform, 100–180 μm diam.; ostiole and periostiole area pale grey-brown, surrounded by a black, involucrellar ring. *Involucrellum* 0.35–0.65 mm diam., brownish-black to black in thin-section, contiguous with the excipulum and 40–65 μm thick above, spreading below, 50–95 μm thick, and penetrating to excipulum-base level. Cells between the lower levels of the involucrellum and the excipulum globose, 3–6 μm diam., with pale to dark brown walls. *Centrum* globose to depressed-ovate, 0.22–0.36 mm diam. *Excipulum* uniformly medium to dark brown, 18–25 μm thick. *Periphyses* unbranched, tightly packed, 25–40 μm long, 2–3 μm wide, often with slightly swollen apices. *Paraphyses* absent. *Hymenial gel* Lugol's I+ red-brown. *Hymenial algae* elongate-cylindrical, (4–)6–10(–12) \times 1.5–2(–2.5) μm . *Asci* fissitunicate, clavate to cylindro-clavate, 8-spored, 65–90 \times 25–30 μm . *Ascospores* colourless to pale yellowish brown, narrowly to broadly ellipsoid, massed in the ascus, muriform, with 5–7 irregularly transverse divisions, each loculus with 1(–2) longitudinal or diagonal divisions, (18–)23(–28) \times (9–)11.5(–14) μm (50 measured); contents usually finely granular. *Conidiomata* not seen. (Fig. 1)

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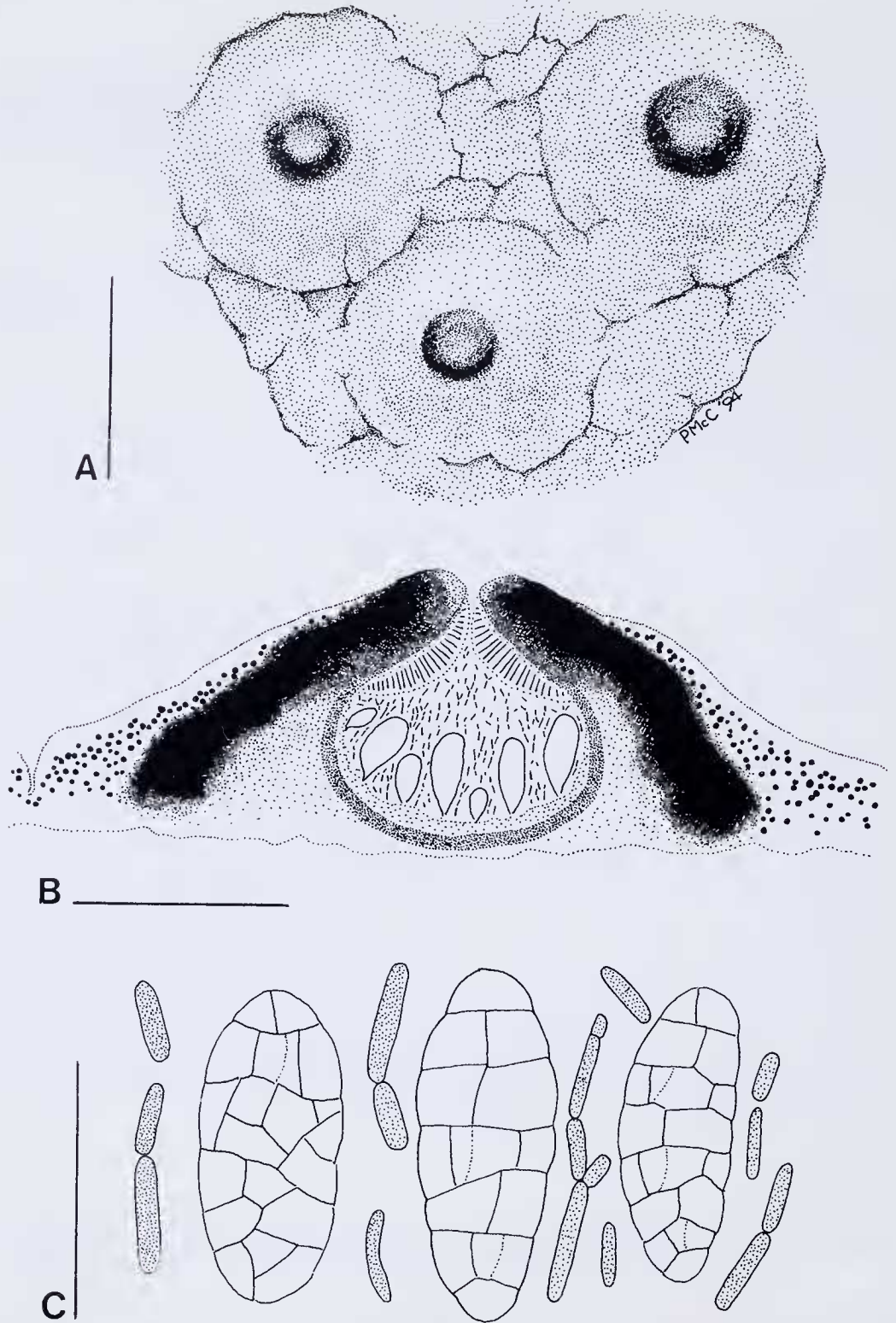


Fig. 1 *Staurothele pallidopora* (holotypus). a — habit of thallus and perithecia; scale 0.5 mm. b — vertical section of perithecium and adjacent thallus; scale 0.2 mm. c — ascospores and hymenial algae; scale 20 μ m.

REMARKS

The new lichen is characterized by the pale, epilithic thallus and immersed perithecia. The latter have a pale apex, a well-developed involucrellum, elongate hymenial algae, 8-spored asci and small, pale ascospores. It is related to *S. hymenogonia* (Nyl.) Th. Fr., a rather common lichen on dry limestone, chalk and mortar in temperate and cooler regions of the Northern Hemisphere. That species, however, has a mainly endolithic thallus, prominent and often pruinose perithecia with dark ostioles, larger ascospores and less elongate hymenial algae (Clauzade & Roux 1985, Purvis *et al.* 1992).

Staurothele pallidopora is known only from subtropical rainforest in the Bunya Mountains in south-eastern Queensland, Australia. The type specimens inhabit shaded, terrestrial rocks in association with *Strigula stigmatella* (Ach.) R.C. Harris, *Verrucaria* sp., *Porina* aff. *guentheri* (Flotow) Zahlbr. and *P.* aff. *hyperleptalea* P.M. McCarthy & Kantvilas. A second collection inhabited semi-aquatic basalt together with *Anisomeridium carinthiacum* (J. Steiner) R.C. Harris, *Hymenelia lacustris* (With.) M. Choisy, *Verrucaria hydrela* Ach. and *V. praetermissa* (Trevis) Anzi.

The specific epithet *pallidopora* refers to the pale perithecial ostiole which is highlighted by the darkness of the surrounding involucrellum.

ADDITIONAL SPECIMEN EXAMINED

Queensland — Bunya Mountains National Park, between Paradise Falls and Little Falls, on semi-aquatic basalt, 5 Sep. 1993, P.M. McCarthy 760 (MEL).

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Manuscript received 3 March 1994.